

Vernia Rootstock Trial, Dundee

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Vernia Rootstock Trial, Dundee - Description

A cooperative trial was planted in Dundee, Polk County in May 2011 on a site of well-drained sand soil. The rows were oriented E-W and sloped down to the west. The Vernia trees on each of 7 rootstocks plus Swingle citrumelo were unequal in number so plot size among the 2-4 replicates varied from 10 to 60 trees. The rootstocks were mostly from the Spanish breeding program along with C-35 citrange.

Soon after planting, a site inspection revealed that sting nematodes were present everywhere. Treatment was initiated and continued for several years after which chemical management was no longer possible and was discontinued. Tree condition remained reasonably healthy for a few additional years so data collection continued. The trial was terminated in 2019.

Vernia Rootstock Trial, Dundee – Observations, 2015

This cooperative project consisted of 2-3, large-plot replicates of each rootstock [with one exception]. There were several factors affecting the trees including land elevation. In general, those trees regardless of rootstock that were located at the east end [higher elevation] of the rows were larger and healthier than those on the same rootstock planted further to the west where the land sloped down. Tree height, overall, is less than what normally is expected of nearly 4-year-old trees. HLB is present, but the visible symptoms were often difficult to distinguish from winter chlorosis and/or micronutrient deficiencies. The best-looking trees so far were those on ES-1 and ES-9; the poorest were those on ES-11. Re HLB, there are no rootstocks in which more than 50% of the trees received a 3 rating [on a scale of 0-4 where 0=dead and 4=very healthy] except those on ES-9 which were substantially better in that respect than all others, but yield was average. So far, no rootstocks stand out because of low to no incidence of HLB or because of horticultural outcomes. All results were compromised to some extent by sting nematodes and/or canker.

Vernia Rootstock Trial, Dundee – End of trial summary, 2019

C-35 citrange: Tree size varied considerably from small for the tree age to common for trees in other trials. These trees were 2nd behind ES-1 for tree height. Overall tree condition suggested commercial tolerance to HLB, but the quantitative impact of sting nematode was not determined. There are 10 trees [14%] with yields about 1/2 box/tree. Some of the smallest trees that were in good condition had similar yield.

Shekwasha mandarin x English Large TF orange: The fewest number of trees in the trial are on this rootstock. They are of average size for this trial and uniform. Tree condition was average [Rating=3], but with some excellent trees. There are 4 trees [19%] with yields of 1/2 box; however, a few trees had crops of about 3/4 box. Across the trial, these were the best cropped trees.

Vernia Rootstock Trial, Dundee – End of trial summary, 2019

ES-1: Tree height was the tallest [5-6 ft] across all rootstocks with overall 68% of the trees rating in good to excellent condition. There are 32 [34%] trees with a yield of ½ box/tree or more.

ES-2: Medium-sized trees with many in average condition and a few excellent ones. There were 5 trees [10%] with yields of ½ box/tree.

ES-3: Smallish trees with mediocre yields and condition. No trees [0%] with ½ box or higher yields.

ES-9: A very high proportion of excellent trees, but all of them had only average yields. There were no [0%] trees with 1/2 box or higher yields.

ES-11: Stunted [dwarfed?] trees in overall poor condition with little to no fruit in virtually all cases. No trees with more than 10-20 fruit.

Swingle: All but about 16% of the trees were in good or better condition [Rating 3 or 4] and those trees tended to be relatively well-fruited with 9 trees [15%] having about 1/2 to 3/4 boxes of fruit/tree.

Conclusion: Despite the confounding effects of land elevation, HLB and sting nematodes, there were rootstock differences. The rootstocks that fared best given those conditions, were Swingle, C-35 and ES-9.

Vernia Rootstock Trial, Dundee - Summary

- Location: Dundee, Polk county
- Scion: Vernia
- Rootstocks: 8
- Date planted: May 2011
- Design:
 - Replicates: 2-4
 - Plot size: 10-60 trees
 - Total: 440 trees
 - Spacing: 15 x 25 ft., 116 trees/acre
- Data:
 - 2014/15, 2017/18 & 2018/19: HLB rating and % of dead trees
 - 2018/19: Tree height and yield [boxes/tree].

- Trial status: **Terminated, 2019.**

Fig. 1. Vernia Trial, Dundee – HLB ratings, and Yield [% of trees with > 60 fruit, January 2015]. Data sorted by yield.

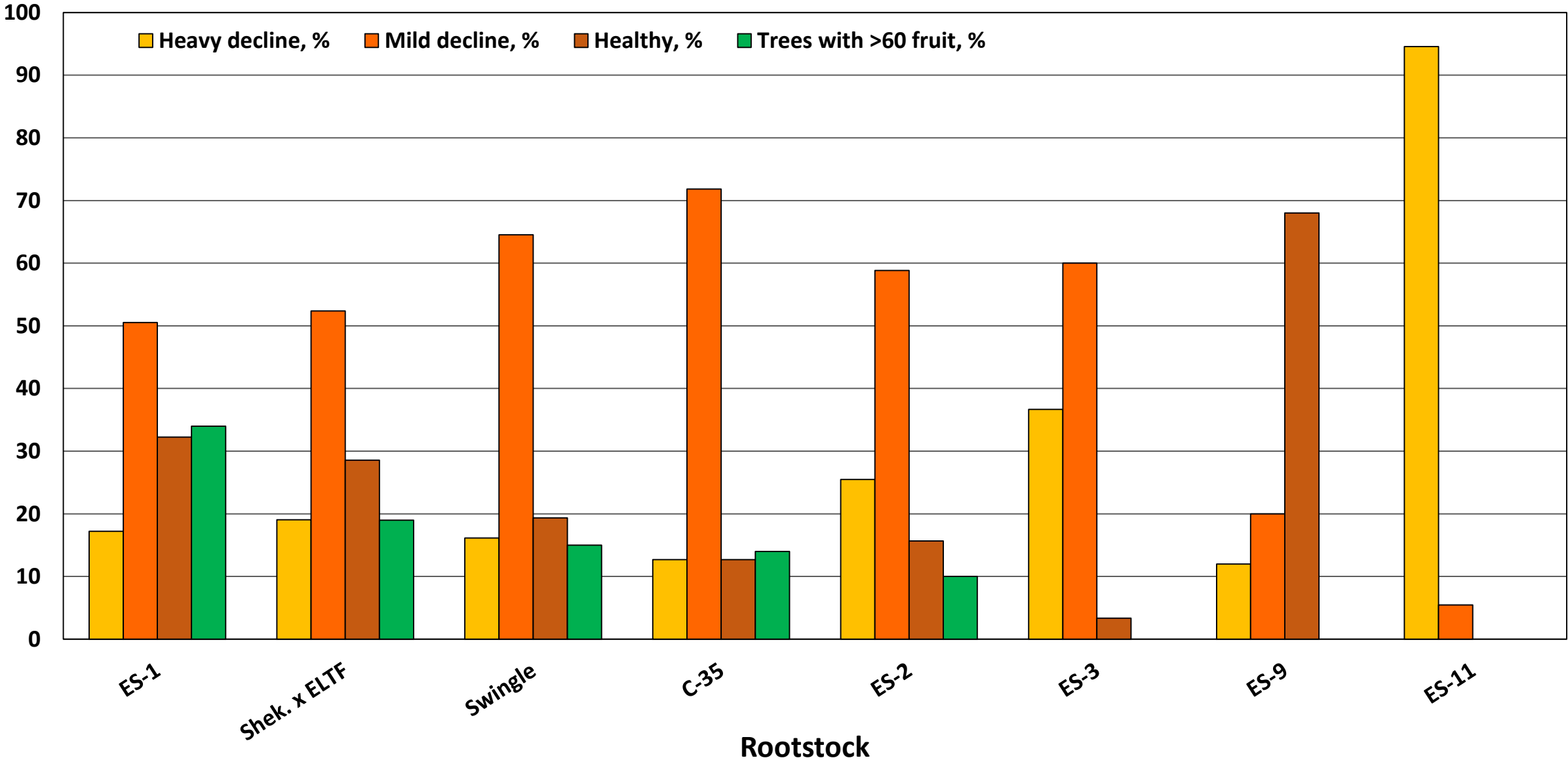


Fig. 2. Vernia Trial, Dundee – HLB rating: mean + std. dev. [January 2015, January 2018 and November 2018].

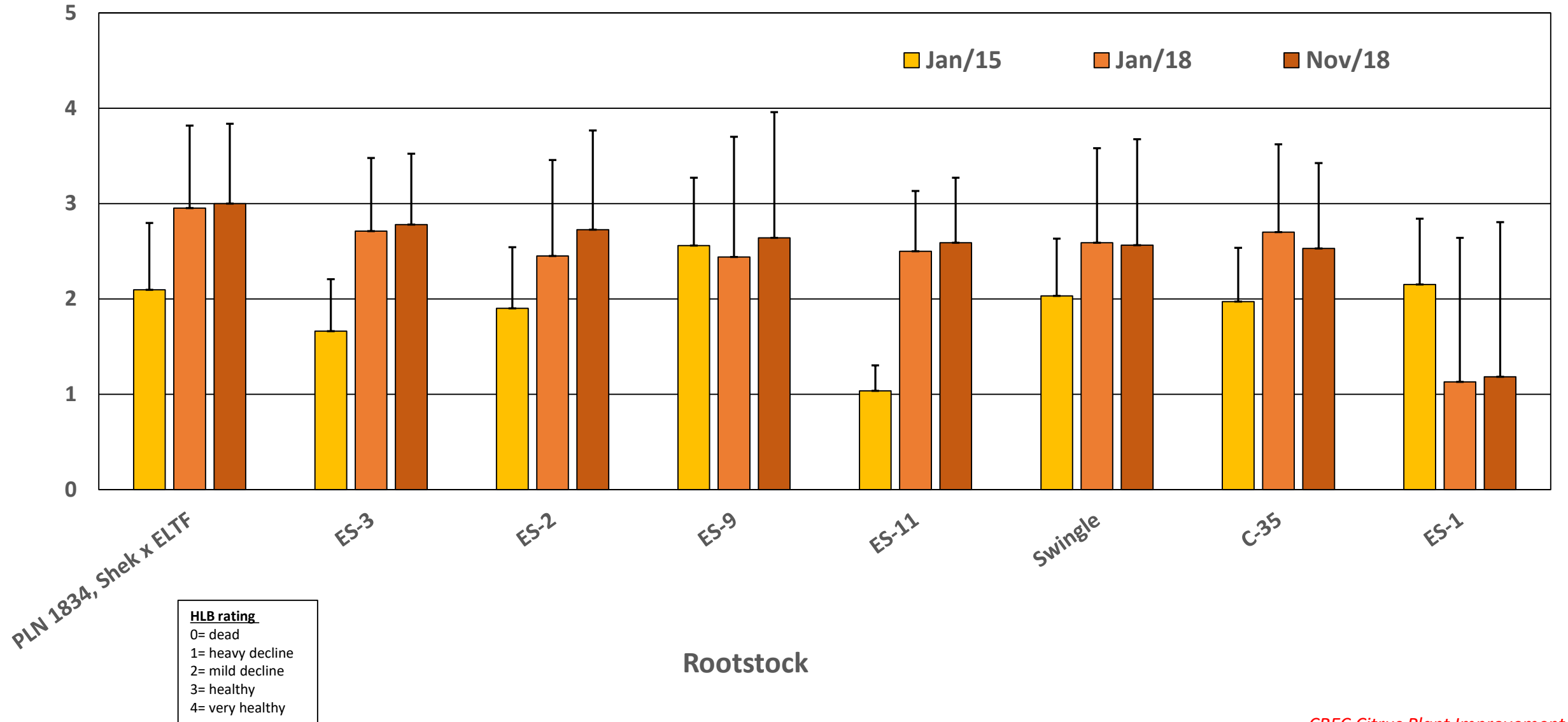


Fig. 3. Vernia Trial, Dundee – Tree height, ft: mean + std. dev. [April 2019].

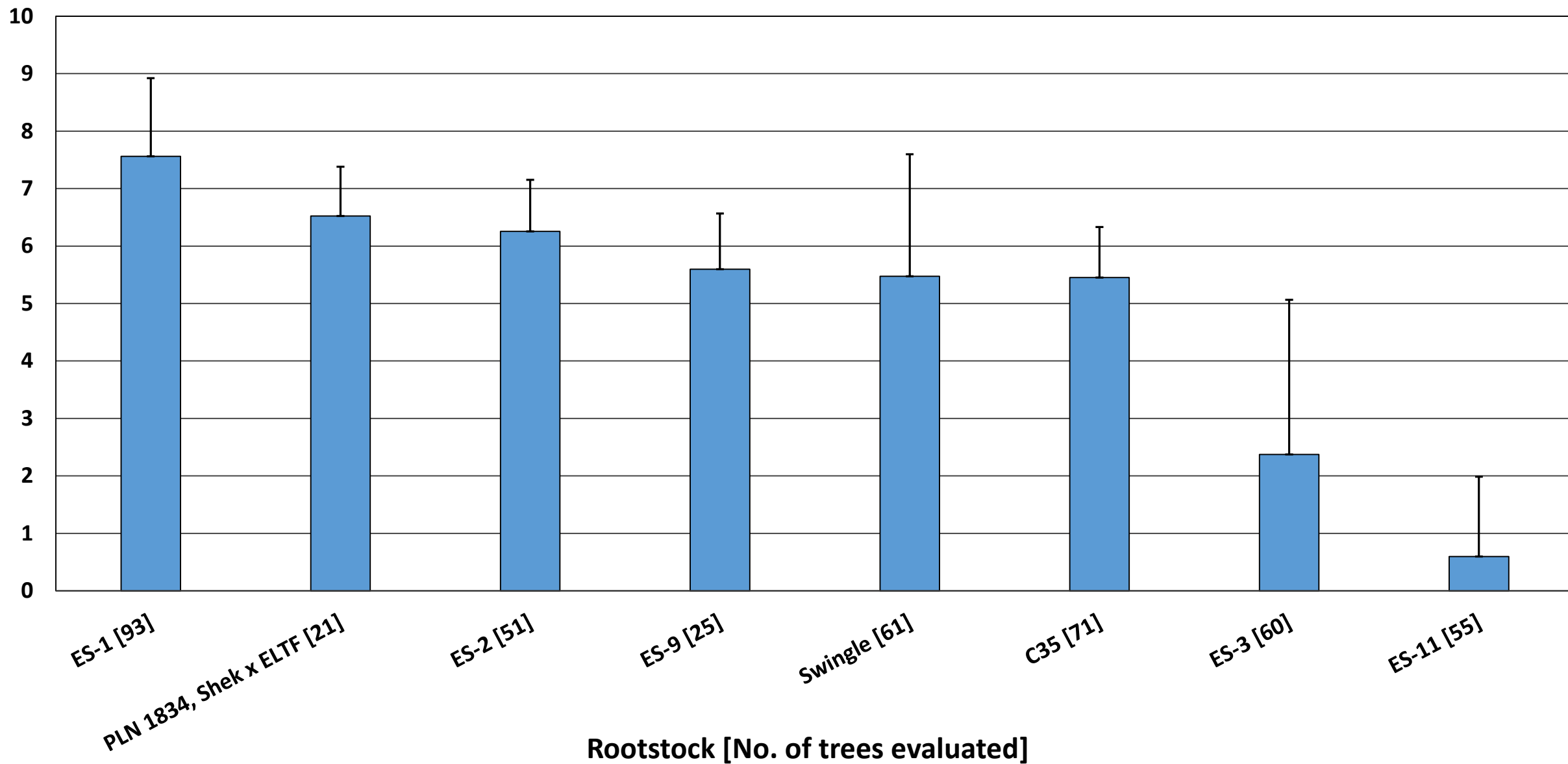


Fig. 4. Vernia Trial, Dundee – Yield, boxes/tree: mean + std. dev. [February 2019; tree age 8 yr.]

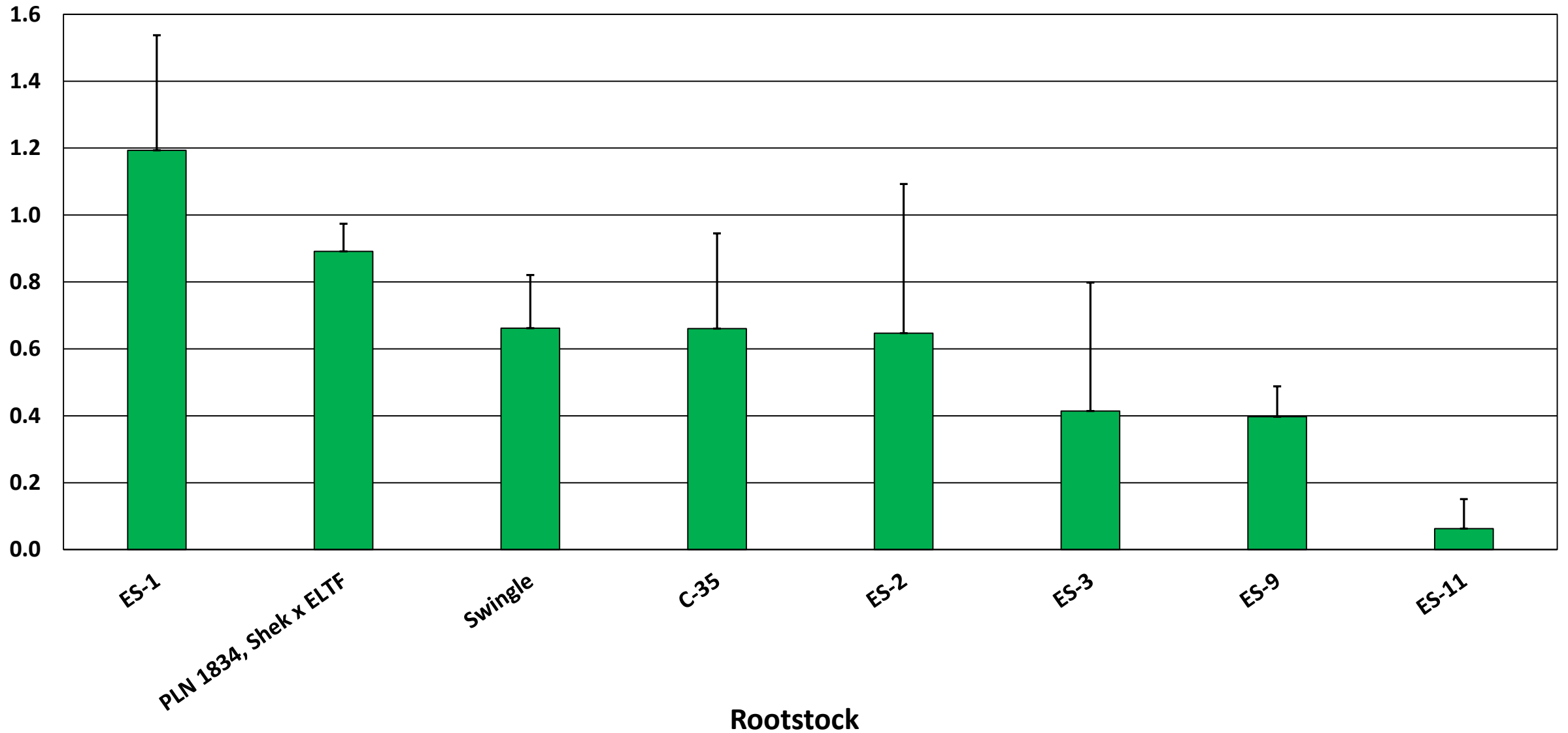
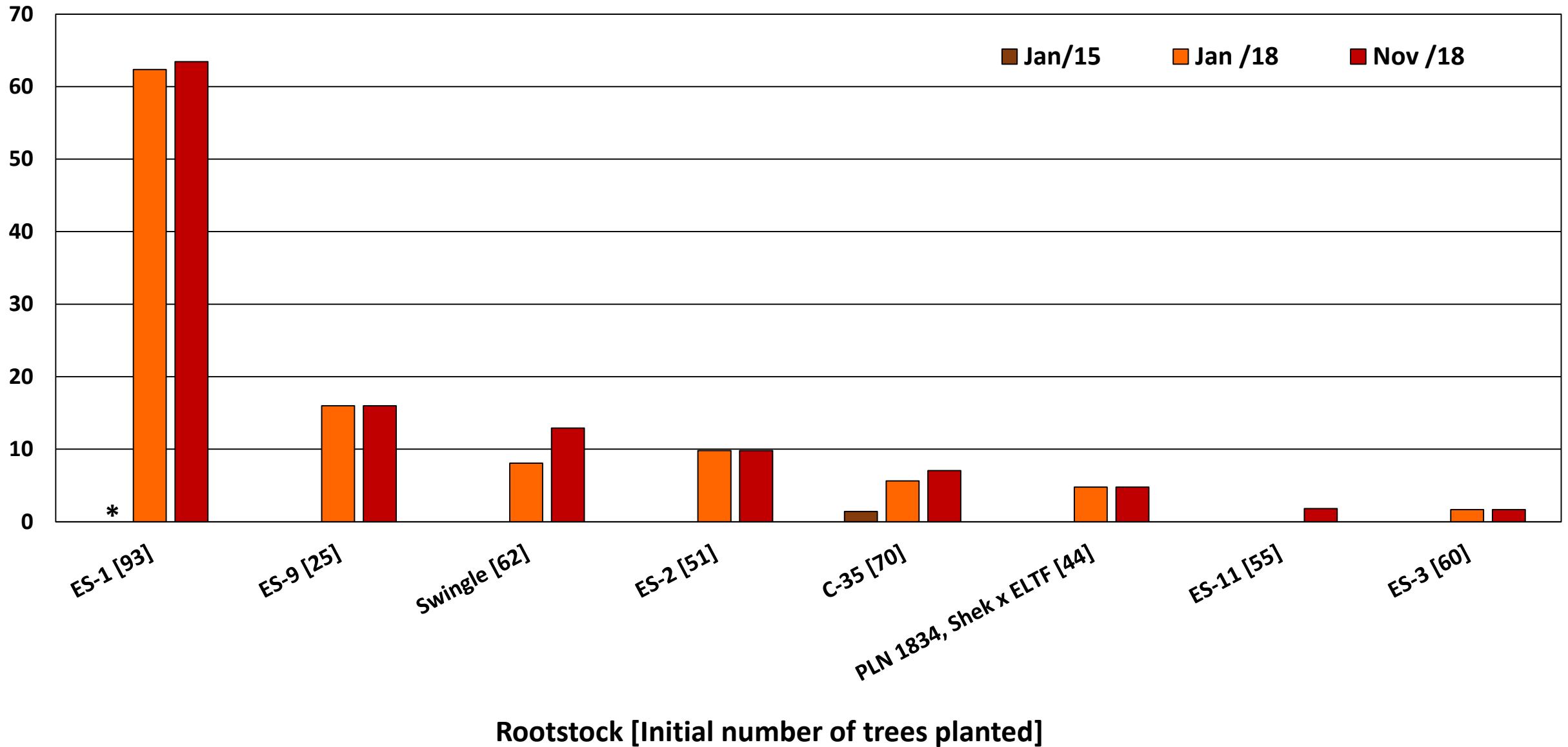


Fig. 5. Vernia Trial, Dundee – Dead trees*, % [Jan 2015, Jan 2018 & Nov 2018].



(*) No bar = 0% dead trees